**What Are The Structures Of An Earthworm?**

**I. Introduction**

We study earthworms to learn the structures and functions of segmented worms, also called annelids. Segmentation supports diversified functions of body parts and tissues. Studying the anatomy and body systems of annelids helps us understand the bodies of higher-level organisms.

Earthworms are classified in the phylum *Annelida* and known as the species *Lumbricus terrestris*. The *Annelida* also include leeches and bristleworms. Segmented worms have bilateral symmetry and have a coelem, which is a fluid-filled body cavity surrounded by mesoderm. Earthworms have two body openings, a mouth and an anus. The basic body plan of a segmented worm consists of a digestive tract within a tube. Earthworms are hermaphrodites, which means that an individual animal produces both sperm and eggs. During mating, two earthworms exchange sperm. Each earthworm forms a capsule for the eggs and sperm in which the eggs are fertilized. The capsule is left behind in the soil where the young earthworms emerge from the eggs in two to three weeks. Earthworms are herbivores. They obtain food by eating through the soil and extracting nutrients from it as food passes through the digestive tract. As an earthworm burrows, it loosens, aerates, and fertilizes the soil. Earthworm burrows provide passageways for plant roots and improve drainage of the soil.

**II. Procedure**

1. Start the activity by going to the following website :

<http://glencoe.mheducation.com/sites/dl/free/0078802849/383950/BL_14.html> .

2. Click the Lab Manual to read about earthworm anatomy.

3. Click the External Anatomy button to view a diagram of the external features of an

earthworm.

4. Drag and drop the Labels to the matching structures of the illustration.

5. When all structures are labeled, the Check button is enabled. Click the Check button to

receive feedback on whether the labels are matched with the correct structures. Correct the

highlighted incorrect labels.

6. Click the Internal Anatomy button to view a diagram of the internal features of the earthworm

and repeat steps 3 and 4.

**III. Data**

1. Record your data in the Table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Plant** | **Optimum**  **Growth**  **Conditions** | **UV**  **Exposure** | **High Salinity**  **In Soil** | **Drought**  **Conditions** |
| Wild-Type Plants |  |  |  |  |
| Mutant 1 |  |  |  |  |
| Mutant 2 |  |  |  |  |
| Mutant 3 |  |  |  |  |
| Mutant 4 |  |  |  |  |
| Mutant 5 |  |  |  |  |

**IV. Analysis & Conclusion**

**1. What part of the digestive system would you see in a cross-section anterior to the**

**gizzard?**

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**2. What structure in the earthworm has a similar function as the human heart? Explain**

**your answer.**

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**3. What do two earthworms exchange during mating? Explain your answer.**

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**4. Describe the difference between a closed and an open circulatory system.**

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**5. Do earthworms have a front and a back end? Explain your answer.**

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**6. What characteristics distinguish an annelid from other worms?**

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